

What is claimed is:

- 1        1. A method of establishing a call in a wireless network, comprising:  
2              sending a request for a packet-switched call over the wireless network;  
3        and  
4              communicating control signaling in a traffic channel of the wireless  
5        network to establish the packet-switched call.
  
- 1        2. The method of claim 1, wherein sending the request comprises sending the  
2        request in a random access channel.
  
- 1        3. The method of claim 2, wherein sending the request comprises sending a  
2        predefined code in a random access channel of an Enhanced General Packet Radio  
3        Services system.
  
- 1        4. The method of claim 3, wherein sending the code comprises sending the  
2        code in a channel selected from the group consisting of a RACH, PRACH, and  
3        CPRACH.
  
- 1        5. The method of claim 1, further comprising retrieving a pre-assigned code  
2        to send in the request.
  
- 1        6. The method of claim 5, wherein retrieving the pre-assigned code  
2        comprises retrieving a random access channel mobile station code.
  
- 1        7. The method of claim 1, wherein communicating the control signaling  
2        comprises communicating the control signaling in a packet data traffic channel.
  
- 1        8. The method of claim 7, wherein communicating the control signaling  
2        comprises communicating the control signaling in PDTCH bursts of an Enhanced  
3        General Packet Radio Services system.

1           9.     The method of claim 7, wherein communicating the control signaling  
2     comprises communicating the control signaling in a packet data traffic channel mapped to  
3     a dedicated physical channel.

1           10.    The method of claim 9, further comprising communicating bearer traffic  
2     in another traffic channel mapped to the dedicated physical channel.

1           11.    The method of claim 10, wherein communicating the control signaling  
2     comprises communicating the control signaling in a PDTCH, and wherein  
3     communicating the bearer traffic comprises communicating the bearer traffic in a TCH,  
4     the PDTCH and TCH defined according to an Enhanced General Packet Radio Services  
5     protocol.

1           12.    The method of claim 1, wherein communicating the control signaling  
2     comprises communicating Session Initiation Protocol messages.

1           13.    The method of claim 12, wherein communicating the control signaling  
2     comprises communicating a Session Initiation Protocol Invite request.

1           14.    The method of claim 1, further comprising sending a release message to  
2     terminate the packet-switched call in a traffic channel.

1           15.    The method of claim 14, wherein sending the release message comprises  
2     sending a Session Initiation Protocol Bye message.

1           16.    The method of claim 1, further comprising sending quality-of-service  
2     related messages in a traffic channel.

1           17.    The method of claim 16, wherein sending the quality-of-service related  
2     messages comprises sending Resource Reservation Protocol messages.

1           18. The method of claim 1, wherein communicating the control signaling  
2 comprises communicating the control signaling in PDTCH bursts, the method further  
3 comprising communicating bearer traffic in TCH bursts.

1           19. The method of claim 1, wherein communicating the control signaling  
2 comprises communicating the control signaling in PDTCH bursts, the method further  
3 comprising communicating bearer traffic in PDTCH bursts.

1           20. An article comprising one or more storage media containing instructions  
2 that when executed cause a controller to:

3                 send control signaling to request a channel for a packet-switched call over  
4 a wireless network; and

5                 add a predetermined code into the control signaling to identify the call as a  
6 packet-switched call.

1           21. The article of claim 20, wherein the instructions when executed cause the  
2 controller to send the control signaling selected from the group consisting of RACH,  
3 PRACH, and CPRACH.

1           22. The article of claim 20, wherein the instructions when executed cause the  
2 controller to further communicate packet-switched call control signaling in traffic  
3 channels of the wireless network.

1           23. The article of claim 20, wherein the instructions when executed cause the  
2 controller to communicate Session Initiation Protocol messages in traffic channels of the  
3 wireless network.

1           24. The article of claim 23, wherein the instructions when executed cause the  
2 controller to communicate the Session Initiation Protocol messages in PDTCH bursts of a  
3 General Packet Radio Services system.

1           25. The article of claim 23, wherein the instructions when executed cause the  
2 controller to communicate a Session Initiation Protocol Invite message.

1           26. The article of claim 25, wherein the instructions when executed cause the  
2 controller to receive response messages to the Invite message.

1           27. The article of claim 23, wherein the instructions when executed cause the  
2 controller to communicate a Session Initiation Protocol Bye message to release a call.

1           28. The article of claim 23, wherein the instructions when executed cause the  
2 controller to communicate messages to provide a supplementary service.

1           29. A mobile station for use in a wireless communications system having base  
2 stations, comprising:

3                 a storage element storing a predetermined code associated with packet-  
4 switched calls; and

5                 a controller to send control signaling to one of the base stations over a  
6 wireless link to set up a packet-based call,

7                 the control signaling containing the predetermined code.

1           30. The mobile station of claim 29, wherein the control signaling comprises a  
2 random access channel.

1           31. The mobile station of claim 30, wherein the random access channel  
2 comprises a packet random access channel.

1           32. The mobile station of claim 31, wherein the packet random access channel  
2 comprises a COMPACT packet random access channel.

1           33. A radio network control system, comprising:  
2                 an interface to a wireless link capable of communicating with a mobile  
3                 station; and  
4                 a controller adapted to receive a request to set up a packet-switched call  
5                 over the wireless link,  
6                 the controller further adapted to assign a logical channel combination in  
7                 response to the request.

1           34. The radio network control system of claim 33, wherein the logical channel  
2                 combination comprises TCH + FACCH + SACCH + PDTCH + PACCH + PTCCH.

1           35. The radio network control system of claim 34, wherein the controller is  
2                 adapted to communicate Session Initiation Protocol messages are in PDTCH bursts.

1           36. The radio network control system of claim 34, wherein the controller is  
2                 adapted to communicate a success indication of a packet-switched call session in a  
3                 PACCH burst.

1           37. The radio network control system of claim 34, wherein the controller is  
2                 adapted to communicate radio resource management signaling in a PACCH burst to  
3                 indicate a state of the packet-switched call.

1           38. A data signal embodied in a carrier wave and containing instructions that  
2                 when executed cause a system in a wireless network to:  
3                 receive control signaling to set up a packet-switched call over the wireless  
4                 network, the control signaling carried in a first traffic channel; and  
5                 establish the packet-switched call over the wireless network.

1           39. The data signal of claim 38, wherein the instructions when executed cause  
2                 the system to further communicate bearer data in a second traffic channel.

1           40. The data signal of claim 39, wherein the control signaling is carried in a  
2 PDTCH and the bearer data is carried in a TCH.

1           41. The data signal of claim 38, wherein the instructions when executed cause  
2 the system to further communicate bearer data in the first traffic channel.